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Maroon Bells-Snowmass Wilderness
Overnight Visitor Use Management Plan
Final Environmental Assessment

Aspen-Sopris Ranger District, White River National Forest
Gunnison Ranger District, Gunnison National Forest
Pitkin and Gunnison Counties, Colorado

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CHAPTER 1: INTRODUCTION

This Environmental Assessment (EA) was prepared to determine whether effects of the proposed activities may be significant enough to prepare an environmental impact statement. By preparing this EA, we are fulfilling Forest Service policy and direction to comply with the National Environmental Policy Act (NEPA) and other relevant federal and state laws and regulations.

This EA discloses the direct, indirect, and cumulative environmental effects that would result from the proposed action and no-action (baseline) alternatives. The document is organized into four chapters:

- *Chapter 1: Introduction* – This section includes information on the history of the project proposal, the purpose and need for action, the Forest Service's proposal for achieving that purpose and need, and applicable White River National Forest Land and Resource Management Plan (LRMP) direction. This section also details how the Forest Service informed State, local, and Tribal governments, non-governmental organizations, and the general public of the proposal and how the public responded.
- *Chapter 2: Description of the Alternatives* – This section provides a more detailed description of the proposed action and no-action alternative.
- *Chapter 3: Environmental Effects of the Alternatives* – This section describes the environmental effects of no-action, as well as the trade-offs and effects of implementing the action alternative. This analysis is organized by resource area. Within each section the existing environment is described first, followed by the estimated effects of no action which provides a baseline for evaluation, and finally the estimated effects of the action alternative.
- *Chapter 4: Agencies and Persons Consulted* – This section lists agencies and others consulted during the development of the EA.

Additional documentation, including more detailed analyses of project area resources, may be found in the project planning record located at the Aspen-Sopris Ranger District Office in Carbondale, Colorado or online at https://www.fs.usda.gov/project/?project=49388.

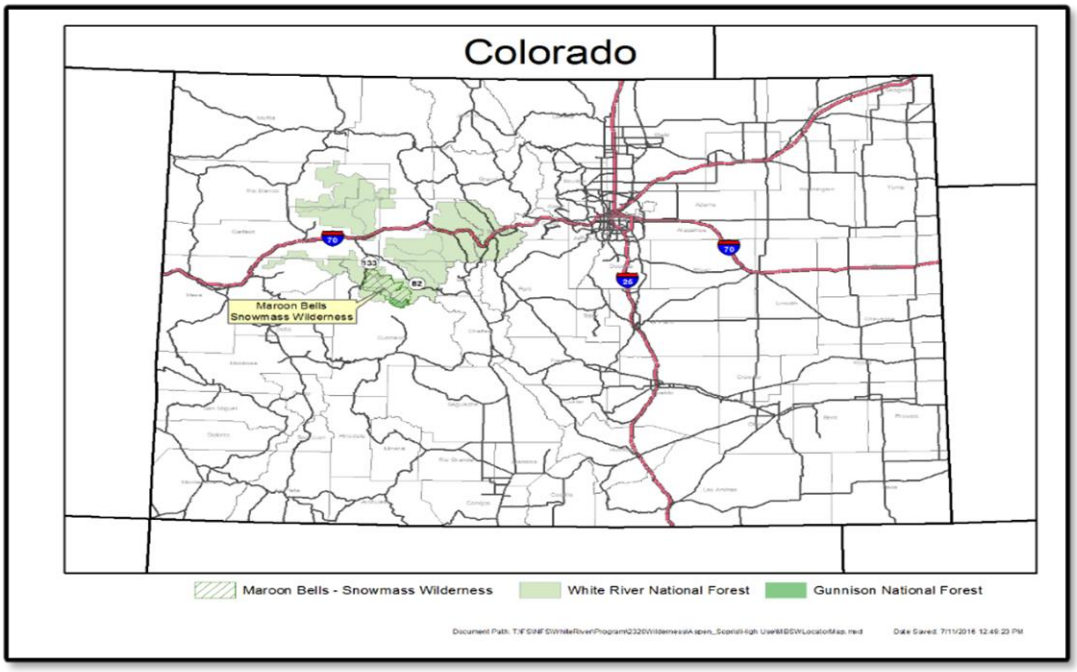
Background

The Maroon Bells-Snowmass Wilderness comprises a surface area of 181,535 acres in central Colorado and is managed jointly by the White River National Forest (WRNF) and Grand Mesa, Uncompahgre and Gunnison National Forest (GMUG) (see Figure 1.1). The Wilderness was established by Congress in 1964 as part of the enabling legislation for the Wilderness Act. It was expanded to its present size by the 1980 Colorado Wilderness Act. The Wilderness lies within Pitkin and Gunnison Counties. There are 27 trailheads that access a trail network of 173 miles to and within the Wilderness.

The Wilderness contains nine trailed passes over 12,000 feet and seven peaks over 14,000 feet, and has been known for decades to contain one of the most iconic and picturesque mountain ranges in the country. Maroon Lake and the surrounding area, just outside the Wilderness boundary, was designated as a Scenic Area in an effort to manage the increasing number of visitors, transportation challenges, commercial uses, etc. More than 300,000 people visit the Scenic Area each year which has, in turn, increased visitation into the adjacent Wilderness.

The degradation of natural conditions caused by high overnight use levels in the Wilderness has been a longstanding issue. The 1988 Maroon Bells-Snowmass Wilderness Implementation Schedule noted that, "Levels of use meet or exceed capacity as a result of excessive overnight visitation at Conundrum Hot Springs, Snowmass Lake and Capitol Lake on weekend days."

Figure 1.1: Project Location



Purpose and Need for Action

In response to increasing natural resource degradation issues and management challenges, the Forest Service is proposing an Overnight Visitor Use Management Plan (OVUM Plan) for the Maroon Bells-Snowmass Wilderness. The OVUM Plan was developed in accordance with existing LRMP direction and seeks to preserve natural conditions in the Wilderness by addressing biophysical effects resulting from overnight use while continuing to provide opportunities for primitive and unconfined recreation. This Environmental Assessment has been conducted to consider and disclose anticipated environmental effects of implementing the OVUM Plan.

Colorado was the second fastest growing state in the country in 2015. Overnight visitation to the Wilderness has more than doubled (115%) on the top ten trails since 2007. Within certain locations (Conundrum Hot Springs, Crater Lake, and the Four Pass Loop) and high use travel corridors, use has nearly quadrupled (285%) from 2006 to 2015 (for example, EA Appendix 5). In 2015, over 17,000 overnight visitors spent an average of three days each in the Wilderness. This trend of increasing overnight visitation to the Wilderness is expected to continue.

A relatively short season and concentrated use patterns exacerbate social and biophysical resource degradation. Campsite inventories have documented 729 campsites in the Wilderness. Of those 729 sites, only half met the LRMP mandatory standard that campsites must be greater than 100 feet from system trails, lakes, and streams. Long term heavy overnight visitation along popular routes and at

destinations in a high alpine environment has exhausted available firewood, resulted in loss of vegetation, left denuded bare hard-pan soil, and resulted in unmanageable human-wildlife conflicts, campfire impacts, litter, and exposed human excrement. The primary issues (addressed in the OVUM Plan) are as follows:

- Overnight visitor use patterns during peak season at popular destinations and routes is causing increased campsite impacts leading to widespread soil compaction, loss of vegetation in fragile alpine environments, campfire impacts, exposed human waste, littering, and wildlife conflicts.
- Perpetually increasing demand for the finite wilderness resource is causing visitor competition, conflict, and displacement.
- Agency management capacity is decreasing as the need for management action is increasing.
- Current conditions in the Wilderness are exceeding existing LRMP direction and desired conditions relating to physical, social and managerial settings, campsite location standards, and visitor use management.

The trend of increasing overnight use in the Wilderness needs to be addressed in order to reduce the biophysical impacts that are occurring. Additionally, action needs to be taken in accordance with the Wilderness Act and current LRMP direction to sustain the area's natural and undeveloped qualities.

Proposed Action

The proposed action, described in the OVUM Plan, is to adaptively manage overnight use in the Wilderness for the reduction of biophysical damage and to preserve opportunities for Wilderness experiences and related socioeconomic benefits in conformance with Wilderness Act direction and the LRMP.

The Maroon Bells-Snowmass Wilderness is comprised of three LRMP Management Areas: Pristine, Primitive, and Semi-Primitive. LRMP desired conditions for the three Management Areas are as follows:

- Pristine – Low density of occupied campsites
- Primitive – Moderate density
- Semi-Primitive – Restrict camping to designated sites

The OVUM Plan translates LRMP standards and guidelines into measurable indicators and thresholds for camping zones for the entire Wilderness (EA, Appendix 2). The OVUM Plan adds a new indicator, "Groups At One Time" (GAOT), per camping zone. This indicator is needed specifically to address and manage biophysical impacts of overnight use. The OVUM Plan defines how many GAOT can camp overnight per Wilderness zone (OVUM Plan, Table 6); the allocation reflects the total number of campsites by zone that meet LRMP desired conditions (EA, Appendix 2). If the GAOT threshold is exceeded, management actions and/or a mandatory overnight use permit system would then be triggered to retain or restore the desired conditions of the Wilderness (OVUM Plan, Tables 6-9).

Management actions may be implemented operationally or through a Forest Service Special Order without further analysis in an effort to retain or return to the desired conditions. The management actions would be phased in from least restrictive to more restrictive in order to preserve visitor freedom if at all possible, following the "minimum tool" intent of Wilderness stewardship. Management actions include a suite of educational tools (e.g., increased signing, media, volunteers, ranger patrols, etc.)

engineering actions (e.g., restoration activities) and administrative actions (e.g., restrictions, closures, regulations). If the action fails to restore desired conditions, more restrictive management actions may be phased in until no threshold is exceeded.

The OVUM Plan is data driven and requires long term monitoring of selected indicators for the Wilderness. No permits would be required for zones that have not exceeded the GAOT threshold. All regulatory management actions, including a limited entry permit system, would be in effect year round.

Forest Plan Direction

This proposal would move the Maroon Bells-Snowmass Wilderness toward desired conditions described in the goals and objectives outlined in the LRMP. This EA is tiered to the LRMP Final Environmental Impact Statement. Current management direction and LRMP goals, objectives, and strategies applicable to this analysis can be found in the OVUM Plan.

Decision and Implementation

The deciding official would decide whether to: 1) Implement the proposed OVUM Plan, 2) Modify the OVUM Plan, or 3) Not implement the OVUM Plan at this time. An affirmative decision on the OVUM Plan authorizes implementation of the management tools contained therein but does not dictate implementation methods or associated fees if a permit system is triggered.

The deciding official would consider implementation methods based on legal authorities, feasibility, technical logistics and Forest Service physical and financial capabilities. A suite of phased management actions could be implemented, including but not limited to increased education and outreach, length of stay limits, restricting camping to designated sites, dog prohibitions, and requirements for packing out human waste. A limited use camping permit system could be implemented in phases starting with zones that are already exceeding the overnight GAOT allocation, and then be applied to other zones if they exceed their overnight GAOT allocation.

The following is a brief description of some, but not all, of the tools and methods the Forest Service could utilize to implement a limited use camping permit:

- Utilize Recreation.gov to issue reservations for limited campsites through the National Recreation Reservation Service, similar to some Forest Service campgrounds. Recreation.gov charges a reservation fee which does not come back to the site for management. Execution of a reservation service fee does not require a Federal Lands Recreation Enhancement Act (FLREA) process.
- Execute an limited use camping permit fee as a Special Recreation Permit under authority of FLREA which would result in revenue available for on-site program management. This would require a separate public participation process, documentation of responses, and Forest Service Regional and Washington Office reviews throughout the process.
- Manage allocation and issue permits out of local Forest Service or partner offices for no fee.

Public Involvement

Starting in 2012 the Forest Service and other interested parties conducted public outreach around the resource degradation issues occurring in the Wilderness with the GMUG, local governments, adjacent communities, interested parties, stakeholders and permittees as well as statewide user organizations. To date, the Forest Service has held or participated in more than 40 meetings, roundtables, newspaper articles, radio shows, presentations, etc. (OVUM Plan, Appendix B).

A Notice of Proposed Action (NOPA) was sent to interested individuals, organizations, and agencies on November 2, 2016. A legal notice was published in the newspaper of record, Glenwood Post Independent, on November 3, 2016. The Forest Service received 292 comments on the NOPA.

Issues brought forward from the public in the NOPA are addressed in the OVUM Plan and/or in the EA (EA, Appendix 1). Some of those issues included but are not limited to phased adaptive management actions, dog regulations and compliance, human waste requirements, enhanced visitor education, visitor displacement, wildlife displacement and visitor conflict, group size, and high use areas affecting adjacent Pristine and Primitive Management Areas.

CHAPTER 2: DESCRIPTION OF THE ALTERNATIVES

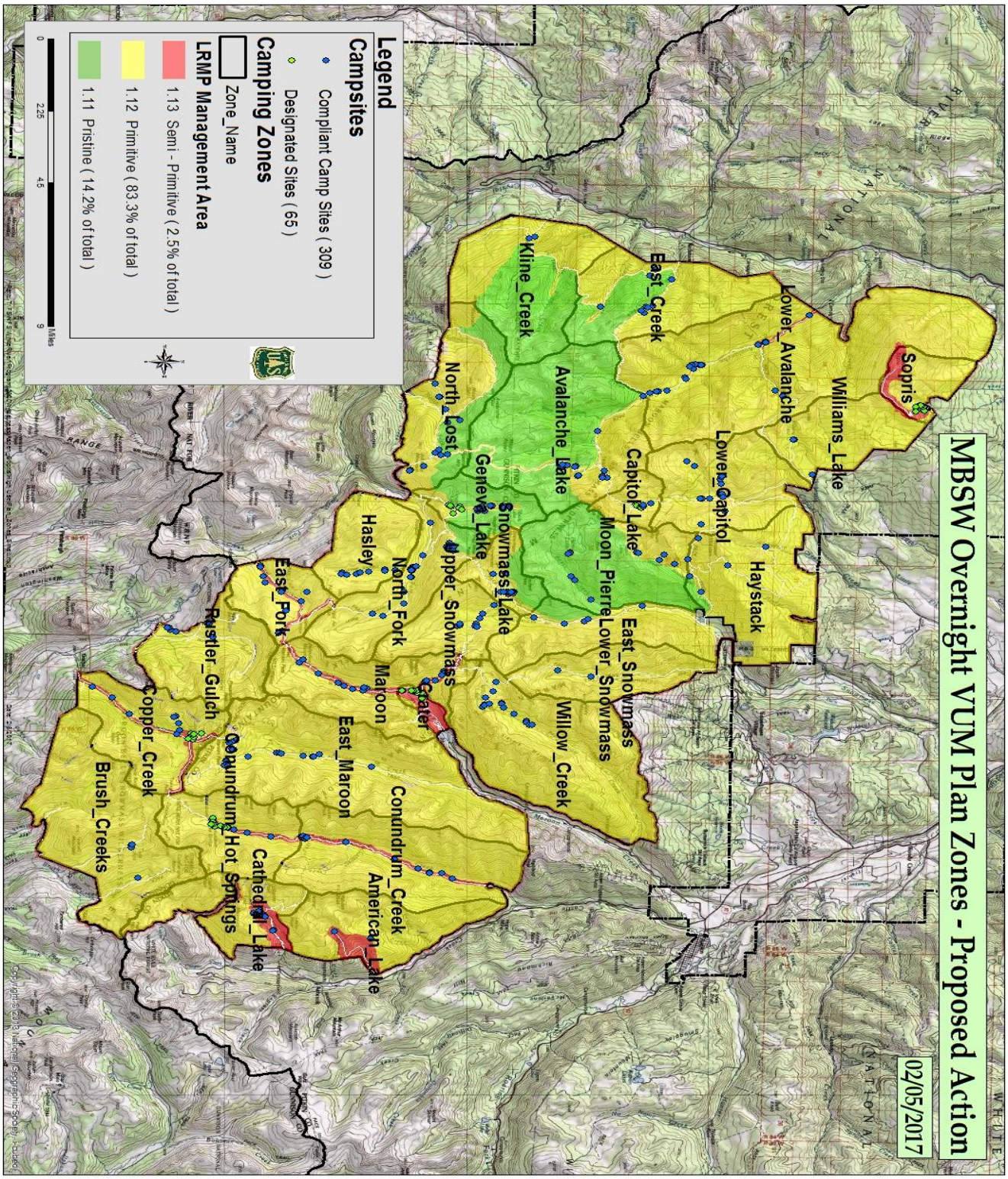
Alternative 1: No Action

Under the no-action alternative, current management would continue in the Wilderness. Overnight camping would continue to occur without any GAOT/campsite limitation. The Forest Service would continue to monitor and manage overnight use through the existing required overnight registration, education and enforcement tools. Population growth, increased visitation, and associated trends and resource damage to the area's natural and undeveloped qualities would likely continue.

Alternative 2: Proposed Action

Under the proposed action, the Forest Service would manage overnight visitor use as described in the OVUM Plan and in accordance with LRMP direction and the Wilderness Act. The OVUM Plan aims to adaptively manage overnight visitor use for the reduction of biophysical damage and restoration of natural conditions while preserving opportunities for Wilderness experiences and related socioeconomic benefits (see above Proposed Action, Chapter 1).

Figure 2.1 – Maroon Bells-Snowmass Wilderness Overnight Zones



CHAPTER 3: ENVIRONMENTAL EFFECTS OF THE ALTERNATIVES

This section summarizes the social, physical, and biological environments of the project area and the estimated effects associated with the implementation of the OVUM Plan (proposed action). The existing environmental condition serves as the baseline condition for each resource. The alternatives were analyzed to provide a comparison of the effects to the baseline condition.

These analyses draw on the best available science as well as guiding laws and policies (e.g., the Wilderness Act, White River National Forest Land and Resource Management Plan, and the Endangered Species Act). Complete specialist reports, Biological Assessments, Biological Evaluations, and references have been included the official project record.

Wilderness

Affected Environment

The Maroon Bells-Snowmass Wilderness encompasses lands designated by the 1964 Wilderness Act (14,843 acres) and the 1980 Colorado Wilderness Act (166,682 acres) making it Colorado's fourth largest Wilderness. The Wilderness exemplifies Rocky Mountain splendor and is one of Colorado's most photographed areas. The Wilderness hosts seven peaks rising above 14,000 feet, and 100 miles of trail. Vast regions lie above the tree line and long glacial valleys point the way to alpine lakes. In midsummer, the wildflowers are outstanding. On an annual basis, the Wilderness draws mountaineers, backpackers and hikers by the thousands, with visitation increasing each year. As a result of this trend, the natural and undeveloped qualities of the Wilderness are degrading, as are the outstanding opportunities for solitude (OVUM Plan, Chapter 1).

Natural Quality

Biophysical impacts directly related to overnight visitor use that are degrading the natural quality of wilderness character include denuded bare soil, hard-pan soil and total loss of vegetation, tree damage, campfire impacts, trash proliferation, and exposed human waste (Marion, et al, 2016). Weekend crowds overwhelm available sites, including designated sites, resulting in expansion of existing sites and creation of new sites.

Long term heavy visitation and campfire use along popular routes and at destinations has exhausted available firewood. Persistent campfire use, despite a regulatory prohibition, results in the use of standing green trees as a firewood source. Tree damage and forest structure impacts have accumulated as a result. The sterilization of soil and scarring of rocks associated with illegal campfire use is also causing negative effects to natural conditions. From 2011 to 2015, rangers removed and naturalized 964 illegal campfire rings in the Wilderness.

Wilderness rangers packed 1,101 pounds of trash out of the Wilderness in 2014 and 2015. Burning trash is still a common practice that releases toxic fumes and results in trash filled fire pits that socially reinforces this behavior. A 2007 study of high use areas within the Wilderness (Massman, 2007) documented a prevalence of exposed human waste at campsites near several popular destinations. In 2014 and 2015, rangers buried 512 incidents of exposed human waste which can lead to human sanitation and wildlife toxicity concerns.

Undeveloped Quality

In addition to the above mentioned campsite developments, user created trails and structures continue to occur on the landscape. Efforts to manage overcrowding have resulted in administrative developments including campsite closures and signage, designated sites, and regulatory signage (campfire closures).

Additional visitor management related issues affect the undeveloped quality of wilderness character including the escalating incidence of motorized rescue operations, illegal commercial guides and mechanized intrusions.

Opportunities for Solitude or Primitive and Unconfined Recreation

Although outstanding opportunities for solitude exist in the low use areas of the Wilderness, high use areas have seen up to a 285% increase in visitation, resulting in a diminished outstanding opportunity for solitude (for example, EA Appendix 5). Visitor conflict on access trails is common as visitors race to occupy a limited number of campsites (designated and/or dispersed). Of particular concern is the overcrowding at high use overnight destinations. At these high use locations, it is common that many occupied campsites are within sight and/or continuous sound are occupied, thus diminishing outstanding opportunities for solitude (Hall, 2016).

Wilderness ranger patrol logs have been analyzed to monitor outstanding opportunities for solitude as defined by encounter guidelines in the LRMP (OVUM Plan, Table 2). Conundrum Hot Springs, North Fork and Snowmass Lake Zones exceeded LRMP Travel Encounter Guideline thresholds for three or more of the six year period analyzed between 2011 and 2016 (EA, Appendix 2).

The high use social setting and correlated impacts to the biophysical environment have resulted in a complex management situation for the Wilderness. Public education is and has been the primary focus of the Wilderness ranger program for decades. In addition to ranger station visitor information staff, agency websites and trail head kiosks, the broad education campaign includes Wilderness rangers who contact backcountry visitors with a focused, professional Leave No Trace message. An extensive education effort with staff and intern rangers made contact with over 10,400 visitors in the Wilderness in 2015.

A required registration system has been in place since 2003 and is a central education and monitoring tool. Free, voluntary use human waste pack-out bags are supplied at two high use trailheads. A large volunteer ranger organization, regular trailhead kiosk updates and a close partnership with local media extend the educational outreach. Observations and years of monitoring have shown limited effectiveness of the current management strategy, including where conditions are exceeding LRMP desired conditions, and demonstrate a need for enhanced management.

As education actions fail to resolve impactful visitor behavior, and in an effort to reduce biophysical impacts from recreation while still providing opportunities for a greater number of visitors, the list of special regulations has grown extensive and complex, thus degrading the primitive and unconfined qualities of wilderness character. A bear food storage requirement was added in 2016 to protect bears and humans from habituation. Designated campsites in six destinations attempt to concentrate visitors on sustainable campsites but weekend use levels overwhelm the available sites. Campfire, group size, stock and dog restrictions are also in place to reduce biophysical impacts. Visitor non-compliance with

regulations is common and represents a major source of social and biophysical resource degradation (OVUM Plan, Figure 11).

Untrammeled Quality

Small scale campsite rehabilitation and restoration are ongoing in the Wilderness. In 2016, 2,870 square feet of campsite restoration occurred in the Wilderness. Due to the small scale and minimal amount of soil and vegetation disruption, this type of restoration is generally not considered trammeling action (Landres, et al, 2015).

Unique or Supplemental Values

The unique and special qualities of Conundrum Hot Springs, a feature of special value in the Wilderness, are degrading due to biophysical, social, and managerial impacts.

Effects of Alternative 1: No Action

Under the no-action alternative, there would be an overall negative effect to wilderness character (natural and undeveloped) in the Maroon Bells-Snowmass Wilderness as current conditions and trends would continue. Areas within the Wilderness that are exceeding existing LRMP direction for protecting wilderness character would continue to exceed LRMP direction. This includes prescribed physical, social and administrative conditions related to campsite locations (away from water and trails), numbers of group encounters while at camp, and campsite conditions. Areas that are not currently exceeding the above mentioned LRMP prescribed conditions would be at risk of exceeding with limited effective managerial mechanisms in place to address the degradation.

In the short term, low use areas may not be affected. In the long term, cumulative and continued degradation of wilderness character in high use areas may result in displacement of visitors to other areas of the Wilderness as they seek a less impacted wilderness experience (Hall and Cole, 2007). Negative consequences of displacement include new biophysical impacts, continued and spreading visitor conflict and displacement, the possibility of more restrictive regulatory management, and decreased outstanding opportunities for solitude. The most significant biophysical impacts occur at initial and low levels of use (Marion, 2016).

Natural

Under the no-action alternative, the natural quality of wilderness character would continue to degrade. Overnight use would not be limited. In high use areas, overcrowding would continue to overwhelm available campsites resulting in increasing biophysical impacts, including denuded bare soil, hard-pan soil and total loss of vegetation, tree damage, campfire impacts, litter, exposed human waste, and wildlife habituation. Use of LRMP non-compliant campsites would continue. New campsites (including non-compliant sites) and therefore new impacts would continue to be created by overflow visitors.

Undeveloped Quality

Current management direction would continue, and the undeveloped quality of wilderness character would continue to degrade. In addition to the above mentioned campsite developments, user created trails and structures would continue to occur on the landscape. Administrative attempts to allow for

increasing visitation while still trying to reduce biophysical impacts would perpetuate the self-reinforcing cycle. Developments including campsite closures and signage, designated sites, and regulatory signage (i.e., campfire closures) would likely continue as the last remaining mechanism to address overcrowding. This reactive management strategy would continue to degrade the undeveloped quality of wilderness character.

Additionally, escalating incidence of motorized rescue operations and mechanized intrusions would continue with increased visitation.

Opportunities for Solitude or Primitive and Unconfined Recreation

The no-action alternative would allow for unlimited access and therefore greater levels of visitation. As use continues to increase, opportunities for solitude would decrease, especially in high use overnight destinations where campsite encounters would continue to increase. In low use areas, outstanding opportunities for solitude may decrease as visitors are displaced from high use areas. The opportunity for a primitive and unconfined type of recreation would continue to exist in its current form which includes extensive and complex existing special regulations such as fire, dog, group size, food storage, etc. (See OVUM Appendix D). Continued layering of visitor restrictions, emergency special orders and closures would be likely and would result in a more confined visitor experience.

Untrammeled

In the context of the Wilderness Act, an untrammeled area is where human influence does not impede the free play of natural forces or interfere with natural processes in the ecosystem. Under the no-action alternative, the untrammeled quality of wilderness character would remain stable. Small scale campsite restoration and rehabilitation would continue but the minimal soil and vegetation disruption would not affect the natural process and untrammeled quality of wilderness character.

Unique or Supplemental Values

The unique and special qualities of Conundrum Hot Springs, a feature of special value in the Wilderness, would continue to degrade due to biophysical, social, and managerial effects.

Effects of Alternative 2: Proposed Action

Under the proposed action, there would be an overall positive effect on wilderness character as the adaptive management strategy would provide mechanisms for management actions (such as enhanced education, interpretation, ranger patrols, restoration activities, etc.) to address and resolve current issues in high use areas. It would also provide a proactive solution to monitor for and then address potential displacement. The adaptive management strategy actions would be phased so that the least intensive intervention that achieves the desired conditions is utilized (minimum tool), which would preserve the integrity of wilderness character.

In the short term, low use areas may not be affected. The permit system, if implemented, would be designed to temporally redistribute visitors rather than spatially relocate them; however, there may be displacement of overnight visitors to travel corridor zones that are adjacent to zones that have gone to a permit system. In the long term, overnight permits in high use areas may result in displacement of visitors to other areas as recreation growth continues beyond the permit system's ability to redistribute

visitors, or people are unable to disperse to non-weekend days. The adaptive management strategy provides a sensitive and proactive mechanism through monitoring to address potential displacement of visitors to other areas (zones) in the Wilderness, thus mitigating the potential for unintended negative biophysical, social, and managerial impacts into lower use areas.

Current conditions and trends of recreation related degradation and impacts would be mitigated. Existing conditions would stabilize and potentially improve. The adaptive management strategy provides a mechanism to manage the Wilderness as intended by the 1964 Wilderness Act and the LRMP, thus ensuring the benefit of the enduring resource of wilderness to American people of present and future generations. Areas within the Wilderness that are exceeding LRMP direction for protecting wilderness character (campsite locations, group encounter, campsite conditions, etc.) would be restored. Areas that are not currently exceeding LRMP direction or are at risk of exceeding LRMP direction would have a sensitive managerial mechanism in place to monitor and address potential degradation.

Natural

Under the proposed action, the natural quality of wilderness character would stabilize or improve. Overnight use in high use areas that have exceeded thresholds, would be limited to sustainable levels, thus abating the problem of spreading campsite impacts. Capping overnight use at a defined capacity would stabilize or decrease biophysical impacts including denuded bare soil, hard-pan soil and total loss of vegetation, tree damage, campfire impacts, litter, exposed human waste, wildlife habituation and displacement in these zones. Use of LRMP non-compliant campsites would decrease. Campsite restoration and rehabilitation would improve the natural quality. New campsite (including illegal/out of LRMP compliance) creation and the associated impacts would stabilize or decrease due to the reduction in overflow visitors.

Undeveloped Quality

Under the proposed action, the undeveloped quality of wilderness character would stabilize or improve. User created trails and structures would stabilize or decrease. Because visitor use would be limited to sustainable levels, managerial attempts to allow for increasing visitation while still trying to reduce biophysical impacts would not be necessary, thus eliminating the self-reinforcing cycle in which more installations and regulations are used to allow more visitors, in turn requiring more installations and regulations. New administrative developments including campsite closures and signage, designated sites, and regulatory signage would not likely be necessary as the adaptive management strategy would provide alternative management actions (such as enhanced education, interpretation, ranger patrols, restoration, etc.) to address overcrowding; however, these tools would remain part of the adaptive management strategy. This proactive management strategy would stabilize or improve the undeveloped quality of wilderness character (See OVUM Plan Tables 7-9).

Escalating incidence of motorized rescue operations and mechanized intrusions would likely stabilize as visitation is limited and enhanced visitor education is implemented.

Opportunities for Solitude or Primitive and Unconfined Recreation

Under the proposed action, outstanding opportunities for solitude would improve. Primitive and unconfined recreation opportunities would remain stable or improve. By reducing the number of

overnight visitors in zones that are above threshold, recreational use of the area would be managed to prevent unreasonably crowded conditions at campsites and throughout the wilderness, thereby preserving or improving outstanding opportunities for solitude. A limited entry permit system for overnight use would impact the visitor's ability to enter the wilderness, and thus degrade the unconfined quality. However, the permit system may increase the primitive and unconfined experience once inside the wilderness as the adaptive management strategy provides alternative tools to prevent layering additional visitor regulations, more campsite designations, campsite closures, signage, etc. Visitors would not have to race to secure one of a limited number of campsites and visitor conflicts will likely decrease or stabilize.

Untrammeled

Under the proposed action alternative, the untrammeled quality of wilderness character would degrade. Management actions such as campsite restoration and rehabilitation would be implemented at a larger scale and the resulting intentional soil and vegetation disruption would degrade the untrammeled quality of wilderness character.

Unique or Supplemental Values

The condition of the unique and special qualities of Conundrum Hot Springs, a feature of special value in the Wilderness would stabilize or improve.

Cumulative Effects

By definition, cumulative effects are the combined incremental impacts of past, present, and reasonably foreseeable actions. Therefore, the no-action alternative would have no cumulative effect as it is not an action. However, under the no-action alternative current wilderness character degradation trends would continue.

Under the proposed action, there would be an impact to the unconfined quality of wilderness character across the analysis area. Instituting an overnight limited use permit system can affect the spontaneity and freedom closely associated with wilderness (EA, Appendix 4). Within the State of Colorado, six of the 44 designated wilderness areas are in some stage of limited use permitting. Indian Peaks Wilderness currently has a limited overnight use permit system in place. Sangre de Cristo, Mt. Evans, Eagles Nest, and Weminuche Wildernesses are in the planning stages of implementing a limited overnight use permit system. Due to the limited number of past, present, and reasonably foreseeable actions, the unconfined quality of wilderness character would not be significantly affected in the analysis area. The cumulative effects of displacement are discussed under the context of the recreation resource.

Recreation and Economics

Affected Environment

The Wilderness is a popular recreation destination and is marketed throughout the world by destination and tourism providers and local communities. Visitors engage in various recreation opportunities including: day hiking, backpacking, trail running, mountaineering, hunting, photography, horseback

riding and skiing. Conundrum Hot Springs, the Four Pass Loop, and several fourteeners are widely known and sought after destinations.

In 2015, over 17,000 overnight visitors accounted for a combined 45,000 user days in the Wilderness (USDA Forest Service, 2016). On their trips, visitors spend money in local communities, thereby supporting employment, income and economic activities in the area both directly and indirectly. For example, visitors on camping trips to the White River National Forest incur a number of expenditures from fuel for the vehicle, food, to other incidental supplies. Visitor spending in the local economy by these overnight users supported over 20 full and part time jobs, approximately $950,000 in labor income and $1.6 million in GDP contributions in 2015.

Overnight visitation represents approximately 14% of total wilderness use (OVUM Plan, Table 3). Total annual Maroon Bells-Snowmass Wilderness visitation (day and overnight use) is approximately 121,428 people. The average group size is 2.5 for day visitors and 2.8 for overnight visitors. The average length of stay for overnight groups is about three days. Overnight visitation is largely weekend focused with almost half entering Friday or Saturday, and this trend is even more pronounced in the fall season (OVUM Plan, Table 4 and Figure 7). Overnight required registration data shows an increasing trend on a few popular trails (Maroon, Conundrum, Capitol) and stable use levels elsewhere (OVUM Plan, Figure 4).

Registration for overnight users has been required since 2003 and provides visitor use data that informs management decisions. Of all overnight visitors to the Wilderness, the majority are from Colorado (OVUM Plan, Figure 6). The US Census Bureau estimated Colorado's state population to be 5,456,574 in 2015 (Denver Post, Svaldi, 2015). In 2015, Colorado ranked as the second fastest growing state with a growth rate that is more than doubled the national average. Colorado's population is expected to reach 7,800,000 by 2040 (Birkeland and Hubbard, 2015; OVUM Plan, Figure 5). If regional visitation patterns to the Wilderness continue unchecked in tandem with regional population growth projections, recreation use of the Wilderness will likely follow a similar increasing trajectory.

Overnight use in the Wilderness has never been limited by a permit system. As use has increased over the years, overcrowding of certain areas has become increasingly problematic. The overuse has led to substantial visitor conflict and serious resource impacts to the environmentally sensitive environment of the Wilderness. Deep and unstable continental snowpack constrains the primary visitation season to the months of June through October. Within certain locations (i.e., Conundrum Hot Springs, Crater Lake and the Four Pass Loop) and high use travel corridors, use has increased up to 285% from 2006 to 2015. The impacts associated with this large increase in use are magnified by the relatively short use season and narrow geographic user preferences. Availability (or lack thereof) of campsites is one of the most important attributes to the Wilderness visitor experience.

Currently there are 20 commercial outfitters and guides permitted within the Maroon Bells-Snowmass Wilderness. Permitted activities include guided hunting, hiking, backpacking, horseback riding, photography, interpretation and education, research and outdoor recreation activities and skills. While non guided hunting does occur in the Wilderness, current hunter use numbers and harvest data (from Colorado Parks and Wildlife) specific to the Wilderness is unknown. Thirty-four percent of Game Management Unit (GMU) 43 and four percent of GMU 55 are within the Wilderness (EA, Appendix 3). Sixty five percent of Bighorn Sheep unit S13, forty percent of Bighorn Sheep unit S25, fifty-five percent of Mountain Goat G12, and 0.4 percent of Mountain Goat G13 are within the Wilderness. Hunter presence generally occurs during fall hunting season with some earlier presence for scouting.

Effects of Alternative 1: No Action

Under the no-action alternative, no changes would be made to the recreation management of the Wilderness. In high use areas, current trends of visitor conflict, overcrowding, and resource degradation would continue. Capitol Lake, Crater Lake, Conundrum Hot Springs, Maroon, and Snowmass Lake zones have exceeded the GAOT thresholds multiple times every year for the last five years. Overcrowding and multiple groups attempting to occupy a limited number of campsites would not be mitigated in these zones.

Overnight use would not be limited and therefore access for all recreationists would remain in its current unlimited state. Current special orders, emergency closures, and regulations would remain in effect and others may be added to address deteriorating social and biophysical conditions. Visitors may be displaced as overcrowding, conflict, and deteriorating biophysical conditions push visitors to seek their wilderness experience elsewhere (Hall and Cole, 2007). Managing the Wilderness to meet LRMP desired conditions would be unlikely.

Outfitter and guide operations would continue in the current state. Also, increasing visitation to the Wilderness would result in continued increase in consumer demands for gas, groceries and other local retail sectors, all of which represent direct effects of recreation spending. Increased consumer spending would generate further demands for labor, goods and services by those retail businesses.

Effects of Alternative 2: Proposed Action

Under the proposed action, the OVUM Plan would be approved and an adaptive management strategy would utilize the wilderness minimal tool concept to address biophysical and recreation issues (See OVUM Tables 7-9). The intent of minimum tool is to phase management actions beginning with the least restrictive action then monitoring to see if conditions come back to meeting desired conditions. Management actions and tools could include enhanced education and outreach, restoration activities, site closures, and/or additional prohibitions if needed. An overnight limited entry permit system would likely be implemented in zones that have exceeded the GAOT threshold at least three of the last five years. Low and moderate use areas would be monitored and a suite of enhanced management actions would be available in the adaptive management plan to preserve desired conditions.

In zones that are currently out of LRMP compliance, the adaptive management strategy would provide a host of management actions to regain compliance with LRMP direction. An overnight limited entry permit system would be used to address zones exceeding GAOT thresholds (e.g., Capitol Lake, Crater Lake, Conundrum Hot Springs, Maroon, and Snowmass Lake). In areas not exceeding GAOT thresholds but exceeding LRMP travel encounter standards and/or LRMP campsite impact guidelines (e.g., North Fork, Avalanche Lake, East Creek, Kline Creek, North Lost, and Upper Snowmass), phased management actions would provide tools to restore LRMP compliance. Recreational opportunities in zones within the Wilderness that are currently compliant with LRMP direction would remain compliant as a result of monitoring and the utilization of the adaptive management strategies in the OVUM Plan.

In areas where the permit system is implemented, visitor conflict would be greatly reduced. Groups displaced by formerly crowded conditions may return for the improved experience. Time based displacement, rather than spatial displacement, is expected to occur as destination focused groups are

redistributed to weekdays. However, wilderness wide GAOT zone monitoring will continue through the existing required overnight registration (and other monitoring protocols) and which would trigger management actions to mitigate the effects of displacement (i.e. increased visitation) if GAOT's are exceeded in any zone or zones (see OVUM Table 6).

As recreational demand increases, or for people that are limited to weekend trips, overnight permits could become harder to obtain. This limitation may displace all types of overnight visitors to other areas or shift use preferences from overnight to day visits. While this OVUM plan does not specifically address or propose management direction for day use, monitoring data can be used to help inform future planning decisions and analysis related to day use social, physical and administrative issues and concerns that are not included in this plan. Phased timing of permit allocation and availability would respect all types users (i.e. those who plan well in advance or those who exercise spontaneity) and allow equal and varied opportunity to obtain permits.

Regulations such as those pertaining to campfires, human waste, food storage, group size and dogs would remain in place and would continue to mitigate biophysical and social impacts under both the no action and proposed action.

The proposed action would not affect existing permitted outfitter and guide operations or displace them to other parts of the Wilderness as existing permitted days were considered in the development of the campsite allocation (capacity) per zone. As such that outfitter and guide operation could be accommodated without adjustments to the campsite (GAOT) allocation (See OVUM Table 6) without negatively affecting the zones desired conditions or standards (i.e. Pristine, Primitive, Semi-Primitive physical, social and administrative settings).

On an annual basis, economic contributions from visitors may not change much since the GAOT allocation effectively limits current use for the total season and would not force a reduction in use levels. However, a reduction in total use could still occur, especially if some of the displaced visitors are not able to substitute their visits with alternative sites, or alternative days of the week (i.e., weekend-only recreationists due to job, etc.). Effects on economic contributions to local communities would occur only if a confluence of factors resulted in lost spending opportunity. For example, if a would-be visitor to the White River National Forest is displaced due to not being able to secure a permit for an overnight stay in the Wilderness area, and for a variety of reasons the visitor is unwilling or unable to recreate elsewhere on the Forest, on a different day, or participate in a different activity, and then ultimately decide to stay home or spend time and money elsewhere, then, there would be a decrease in economic contribution to the area. In other words, substitution behaviors play an important role in the ultimate effect on the local economy.

As such, it is difficult conclude that a change in GAOT allocation would have direct and proportional effects in terms of regional economic contributions (jobs, income or GDP from visitor spending) from visitors. Also, other factors are at play, including the willingness or opportunity to visit and camp at a different time or place (but still within the White River National Forest), replacement / back-fill by different types of recreationists (who also spend money in the local area), and changes in spending pattern and regional economic conditions.

Forest Plan Consistency

The LRMP provides direction to manage the physical and social setting of the Wilderness to provide a specific recreation opportunity for visitors and to provide them with the opportunity to achieve specific beneficial outcomes. As use has increased, some areas of the Wilderness are no longer in compliance with LRMP direction (EA, Appendix 2).

White River LRMP travel encounter standards are currently being exceeded in Conundrum Hot Springs, North Fork, and Snowmass Lake zones. LRMP campsite impact guidelines are currently being exceeded in Avalanche Lake, Capitol Lake, Conundrum Hot Springs, East Creek, Kline Creek, Maroon, North Fork, North Lost, Snowmass Lake, and Upper Snowmass zones.

The proposed action would enable compliance with LRMP direction pertaining to recreation opportunity and parties encountered.

Heritage

Affected Environment

While backpacking is generally considered to be a low impact activity for cultural resources, the recent substantial increase in visitors to the Wilderness can threaten cultural resources. Archaeological phenomena such as structures, shelters, features, artifacts, rock art, human remains, or any portion or piece of the preceding which possess scientific, historic, and/or social values of a cultural group are defined as cultural resources.

Seventeen cultural inventories with a total of 1,014 acres were completed within the Wilderness. These inventories resulted in finding 11 sites that have been determined to be “not eligible” for the National Register of Historic Places (NRHP), one site whose eligibility has not been determined, and two sites that are “eligible” for the NRHP.

Effects of Alternative 1: No Action

The no-action alternative would continue current conditions that further threaten the cultural resources within the Wilderness. Without a reduction of overcrowding, cultural resources have a greater chance of being discovered by the public and possibly stolen, damaged or destroyed.

While previous cultural resource inventories in the Wilderness have resulted in the discovery of few eligible cultural resources, the majority of project area has not been inventoried. This indicates there could be cultural resources that have not been recorded at this point in time and therefore could be at risk from the increasing use of the wilderness. Activities related to hiking, backpacking and camping may directly affect artifacts from a surface context and could also impact Native American use of Traditional Cultural Properties (TCP).

Generally, backpackers, hikers, hunters and fishermen have the potential to disturb all kinds of cultural resources ranging from lithic scatters to rock art to historic sites. Cultural sites and features can be impacted by ground disturbance (digging of latrines or illegal fire pits), displacement (removal of rocks and logs from features) and graffiti, vandalism or theft (California Department of Parks and Wildlife, 2017). Large gatherings at hot springs and other water sources have the potential to damage or destroy

cultural resources by accelerating erosion in the surrounding area which could expose subsurface materials.

Effects of Alternative 2: Proposed Action

The proposed action aims to reduce natural resource impacts from overnight visitor use in the Wilderness and would likely reduce impacts to cultural resources. The reduction of visitation through a permitting system would aid in the protection of cultural resources.

The OVUM Plan management activities such as campsite rehabilitation have the potential to adversely affect cultural resources, but could be mitigated through communication efforts. The overall goal would be to lessen the human effects on the Wilderness. This aligns with Forest Service and federal policies and laws that protect cultural resources. The permitting process and adaptive management strategy would incorporate visitor education, and cultural resource protection would be included with the natural resources protection notices. This would result in beneficial affects to cultural resources.

With the use of an adaptive management strategy as proposed, Wilderness rangers and staff would able to be coordinate with heritage staff to develop an awareness of the cultural sites within the Wilderness, help monitor those sites, and develop management actions if a site is damaged or threatened by current levels of use.

Soils and Hydrology

Affected Environment

Across the sub-watersheds within the Wilderness, major vegetation types range from alpine and subalpine meadows and turf-land to semi-arid and wet forested lands. Habitats within the wilderness include cold, clear, fast-flowing mountain streams, alpine lakes, riparian zones near streams and other wet areas, mountain meadows, aspen groves, conifer forests, and alpine tundra. The Wilderness hosts roughly 1,460 acres of wetland (US Fish and Wildlife Service, 2017). Riparian areas are supported in moist soils next to streams and consist mainly of shrubs, such as willows, alder, and river birch, as well as blue spruce and aspen trees.

Water that flows from the Wilderness contributes to public water supplies as well as to agricultural and recreational uses. Within the Wilderness boundary there are no designated public water sources that originate from below the surface (i.e., wells, springs, seeps, or other discharge areas), and there are no designated public surface water intake point locations.

There is a variety of soils in the Wilderness area due to the myriad of landforms, parent materials, and vegetation. The textures of the soils in the area are generally medium to coarse textured (silt loam to sandy loam) and have high content of coarse rock fragments. None of the soil components in the project area are considered “erodible;” however, removal of organic-rich surface horizons often exposes much more erodible, clayey subsoils.

Along trails, erosion rates have been altered where tree roots are exposed, where trail tread has been widened, and near lakes and streams where social trails and barren areas exist. Maintenance of soil

organic matter and surface horizon integrity is necessary to avoid erosion, compaction, and hydrology problems potentially associated with biomass removal.

Camping within 100 feet of lakes, streams and system trails is prohibited unless exceptions are justified. Currently, 29% of inventoried campsites in the Wilderness are within 100 feet of system trails, and 30% of inventoried campsites are within 100 feet of lakes or streams. Watershed damage at heavily used campsites consists of large barren core areas, social trails along lake shores, tree damage (i.e., canopy cover removal), the presence of litter, placement of campsites and social areas too close to waterways, trampling of vegetation, and introduced volumes of human excrement.

Climate change is likely to bring the greatest challenge to Wilderness management. Model projections identify the possible nature and magnitude of future landscape changes, but such projections carry large uncertainties of scale and accuracy, and therefore have limited use for making predictions. Water resources will continue to change; landslides and avalanches will continue to occur and introduce relatively large volumes of sediment into streams, acid deposition will continue to alter chemistry in snowpack and snowmelt streams, protozoan parasites could subsist within Wilderness water (i.e., *Giardia, Cryptosporidium,* and *Naegleria*), and wetland hydrology will remain highly dependent on subsurface water flow.

Effects of Alternative 1: No Action

Absence of an overnight visitor use management strategy is likely to lead to a continuation and increase in biophysical resource degradation in the Wilderness. Observations and years of monitoring have shown limited effectiveness of the current management strategy in the face of ever increasing pressure. High levels of concentrated visitor use have resulted in negative effects to vegetative ground cover, soil, and riparian function, while unburied or exposed human waste is a cause of environmental contamination.

Repetitive use of sites for camping causes numerous changes, including damage to and loss of vegetation, disruption of organic soil horizons, and compaction of mineral soil. Trampling reduces infiltration rates, which increases runoff, which leads to increased erosion of surface organic horizons. This in turn increases susceptibility to compaction, which leads to further erosion. Once initiated, much of this process can sustain itself without further recreation use.

If the no-action alternative were selected, the bare ground already exposed from overnight visitor use would erode and displace due to the absence of topsoil and vegetation cover for protection. Soil is a slowly renewable resource as estimates for rates of soil formation range from .0056 cm to .00078 cm a year (Alexander, 1998).

Not amending human caused disturbance in riparian zones and along streambanks could lead to degradation of aquatic habitat due to increased volumes of fine sediment introduced to waterways. However, the ability of streams to buffer some compounds and dilute contaminants, make it unlikely that there would be serious cumulative long-term water quality effects on a large scale due to human caused conditions within the Wilderness.

Effects of Alternative 2: Proposed Action

The proposed action would decrease or halt the negative trends in biophysical effects by creating a baseline of compliant campsites and GAOT capacity, integrating the monitoring of the new GAOT indicator per camping zone, and implementing a limited entry permit system in phases for zones that exceed the GAOT allocation. Campsites that exceed thresholds of biophysical impacts would be closed and restored to allow for vegetation cover to come back and protect soils from erosion and displacement.

Water resources would benefit from implementation of an overnight visitor use management strategy that serves to meet LRMP standards for distance from lakes, streams and system trails. The proposed action would avoid contribution to the natural tendency for campsite impacts to spread haphazardly across the landscape and could assist with reducing sediment yield as well as decreasing the potential for exposed human excrement to degenerate near and within waterbodies and flowpaths.

LRMP Consistency

Forest-wide standards for the management of soil and water resources were published in the LRMP. Selection of the no-action alternative would be consistent with the LRMP standards and guidelines for water and riparian resources, and with the management measures described in the Forest Service Watershed Conservation Practices Handbook (WCPH). Likewise, the proposed action would comply with LRMP standards for soil, water, and riparian resources, and with the WCPH management measures pertaining to riparian and wetlands, sediment control, and soil quality.

Aquatics, Wildlife, and Botany

Affected Environment

The Maroon Bells-Snowmass Wilderness supports a wide variety of aquatic and terrestrial wildlife, as well vegetation communities including forested, non-forested, upland, alpine, riparian, fen, hot spring adapted, and other wetland environments.

All of the water within the Wilderness contributes to the Roaring Fork River and eventually to the Colorado River which provides critical habitat for federally endangered aquatic species. Within the Wilderness, the Forest Service Region 2 Sensitive Species, Colorado River Cutthroat Trout, can be found in several drainages (Metcalf *et al.*, 2012; Hirsch *et al.*, 2013). No other Sensitive fish species are known to occur within the Wilderness. Threatened Greenback Cutthroat Trout do not occur on the White River National Forest. The ranges of both Boreal toads and Northern Leopard frogs include the Wilderness (Colorado Parks and Wildlife 1 and 2, 2015). Both are Forest Service Region 2 Sensitive Species.

The Wilderness provides outstanding habitat and opportunity for solitude and isolation for terrestrial wildlife with few influences from human presence or primitive uses. Wildlife present are native to subalpine and alpine vegetation communities found generally above 8,500 feet in elevation adapted to relatively short summer growing seasons and long snowy winters. In most cases, wildlife shift habitat use seasonally in response to the onset of deep snow during winter, either to move down in elevation to areas of warmer southerly aspect or to windblown ridgelines having less snow and potential for exposed forage.

The Wilderness supports a wide variety of plant species, including rare plant species with special protections under law and regulation. No federally listed plant species habitat occurs in the project area. Several Forest Service Region 2 Sensitive plant species are likely to have habitat in the project area.

A Biological Assessment (BA) for federally listed Threatened, Endangered, and Proposed (TEP) Species and a Biological Evaluation (BE) for Forest Service Region 2 Sensitive Species and Species of Local Concern were prepared for aquatic, wildlife, and botany resources for the OVUM Plan. These reports are included in the project record for reference. Forest Service Manual 2670 provides direction on the review, actions, and programs authorized, funded or implemented by the Forest Service relative to the requirements of the ESA.

Effects of Alternative 1: No Action

Ever increasing numbers and densities of overnight visitors leads to greater intensity of use at existing sites, creation of more campsites as well as other affected sites, and would likely increase use of marginal sites such as steep, erosive, or wet sites. Campsites and trails in mountainous terrain tend to congregate along streams and in riparian corridors for both logistical and aesthetic reasons. If the no-action alternative were selected, deteriorating instream and riparian conditions would be expected to have a detrimental effect on aquatic macroinvertebrates, cutthroat population densities or perhaps age class distributions, and Boreal toads and Northern Leopard frogs which utilize sensitive riparian areas to breed, lay eggs, and provide nursery habitat. Given that habitat conditions in the analysis area appear to be starting from a relatively functional baseline, the no-action alternative would adversely affect individuals (trout, frogs and toads), but would not likely result in a loss of viability in the Wilderness, nor cause a trend toward federal listing.

The no-action alternative would have no effect on any terrestrial threatened, endangered, or proposed species or designated critical habitat. The Canada lynx is the only federally listed terrestrial species having potential to occur in the project area, and general non-motorized recreation activities such as hiking and camping are not known to impact the species (Ruediger, *et al*. 2000). There may be some locations along trails and concentrated camping zones in the analysis area where human presence and use occurs in key areas for some native or Forest Service Region 2 Sensitive wildlife species. In these areas some species may be influenced by human presence and use. The type and degree of influence depends on the species as well as the level of human presence and use. For wildlife that are disturbed and displaced by these levels of human presence, this trend may continue or increase under the no-action alternative.

Although human presence and use primarily causes wildlife to move away, there are some interactions that may draw some wildlife to humans potentially leading to nuisance or conflict interactions and management actions in response to specific conflicts. Under current management, these types of interactions have been increasing over the past five to seven years despite efforts to convey Leave No Trace practices and other actions to prevent wildlife conflicts.

In terms of botanical resources, direct effects of trends of increasing visitor use include trampling of above-ground portions of plants which can lead to death of individual plants and reduced reproductive success (Willard and Marr, 1970; Cole and Landres, 1996). Direct effects also include the compaction of soil which could indirectly affect rare botanical resources due to loss of suitable sites for rare plant growth (Willard and Marr, 1970; Cole and Landres, 1996). Trampling of plants has already resulted in bare ground being exposed and soil compaction at many existing illegal campsites. If these effects

continue, they could lead to a decline of population size and population viability of rare plants in the area.

Effects of Alternative 2: Proposed Action

The proposed action would limit overnight visitor use in the Wilderness. As such, visitors would be under less competitive pressure to find suitable campsites and would not be pushed into marginal areas and noncompliant campsites. Campsites that meet LRMP standards have the least effect on riparian resources. Concentrating use into these types of sites would therefore likely benefit overall riparian health. The concentration of use at the LRMP compliant campsites might also lead to a gradual rehabilitation of marginal sites that no longer see much use.

Cutthroat populations and macroinvertebrate communities in the Wilderness would be expected to continue to reflect good instream habitat conditions. Baseline conditions in the Wilderness appear to be good. Since the proposed action would likely help to maintain those conditions, the proposed action would have no effect on cutthroat trout or aquatic macroinvertebrates. Boreal toads and Northern Leopard frogs would continue to be subject to indirect effects of visitors on their riparian habitats as well as direct mortality from being trampled; however, the proposed action would have no effect on toads and frogs.

Due to a reduction in negative trends in habitat degradation, there would be a beneficial effect long term for terrestrial wildlife species, including pygmy shrew, bighorn sheep, and white-tailed ptarmigan. Reducing the level of human presence and use in key areas of habitat could improve conditions for some individuals and perhaps local populations. In some cases, this could benefit reproduction and survival for some individuals and perhaps local populations long-term. The proposed action would have no effect on other Forest Service Region 2 Sensitive wildlife species. A reduction in concentrated human presence and use under the proposed action could help to reduce human-wildlife conflicts, in conjunction with adaptive management actions. Under either alternative, natural processes would continue to have the greatest influence on terrestrial wildlife and their habitat. Habitat would remain available for native wildlife and Forest Service Region 2 Sensitive wildlife.

There would be no effect to vegetation as a result of limiting overnight visitor use. Through the adaptive management approach described in the proposed action, certain areas could be targeted for closure and/or revegetation. The proposed action would likely reduce trampling and soil compaction leading to a beneficial effect on rare botanical resources in the area (Willard and Marr, 1971). The project could also reduce the indirect, negative effects of overuse on rare botanical resources; for example, a reduction in human waste could benefit plant populations by reducing nutrient load in water and soil.

Cumulative Effects

Since there are no effects aside from the continuation of baseline conditions, there are no cumulative effects to aquatic, wildlife, or botanical resources of the no-action alternative. The proposed action does not have interrelated or interdependent activities or effects on adjacent state or private lands. All future federal projects would undergo separate analysis in accordance with NEPA and Endangered Species Act (ESA) procedures.

Forest Plan Consistency

For aquatic species, the proposed action is consistent with the LRMP which includes direction to ensure projects maintain sufficient habitat in each stream currently supporting a self-sustaining fish population.

The LRMP applies Management Area 5.42 to the Maroon Bells-Snowmass Wilderness which says directs the Forest Service to restrict activities that disturb bighorn sheep. The proposed action may help the Forest Service better achieve this guideline over the long term because of the general reduction in visitor trends as well as rehabilitation of some areas.

The proposed action is consistent with the LRMP and other federal, state, and local laws applicable to rare botanical resources. No federally listed plant species habitat occurs in the project area. Several Forest Service Sensitive plant species are likely to have habitat in the project area. Any work to rehabilitate campsites would follow revegetation standards and guidelines set forth in the LRMP.

CHAPTER 4: AGENCIES AND PERSONS CONSULTED

- Pitkin County
- Colorado Parks and Wildlife
- King's Range National Conservation Area, Bureau of Land Management
- Arthur Carhart National Wilderness Training Center (Interagency)
- University of Montana
- USFS Rocky Mountain Research Station/ Aldo Leopold Wilderness Research Institute
- Ute Indian Tribe
- Ute Mountain Ute Tribe
- Southern Ute Indian Tribe
- State Historic Preservation Office

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